UNITED STATES PATENT OFFICE.

HIRAM STEVENS MAXIM, OF LONDON, ENGLAND, ASSIGNOR TO ALBERT VICKERS AND ROBERT R. SYMON, BOTH OF SAME PLACE.

MACHINE-GUN.

SPECIFICATION forming part of Letters Patent No. 317,161, dated May 5, 1885.

Application filed May 27, 1884. (No model.) Patented in England June 26, 1883, No. 3,178, and July 16, 1883, No. 3,493; in France July 2, 1883, No. 156,344, and in Belgium July 4, 1883, No. 62,519.

To all whom it may concern:

Be it known that I, HIRAM STEVENS MAXIM, a citizen of the United States of America, and residing at London, England, have invented new and useful Improvements in Fire-Arms, (for which I have obtained patents in Great Britain, No. 3,178, dated 26th June, 1883, and No. 3,493, dated 16th July, 1883; France, patent of addition, No. 156,344, dated 2d July, 1883; Belgium, patent of addition, No. 62,519, dated 4th July, 1883,) of which the following is a specification, reference being had to the accompanying drawings.

In the specification accompanying my petition for United States Letters Patent filed May 2, 1884, No. 130,166, I have described an automatic machine or battery gun—that is to say, a gun wherein the operations of feeding, loading, firing, extracting, and ejecting are automatically performed by the explosion of a cartridge.

My present invention comprises improvements in the construction and mode of operation of the gun referred to, the said improvements relating to the mechanism for effecting the operations of feeding, firing, extracting, and ejecting the shells, the objects of the improvements being to simplify the construction of the parts, and to render their action or operation more certain and effective.

In the accompanying drawings, Figure 1 is a plan of a machine-gun constructed according to the present invention, showing the same with the cover or top plate removed. Fig. 2 is a central longitudinal section of the same, with some of the parts shown in elevation. Fig. 3 is a sectional elevation showing part of the feeding mechanism. Fig. 4 is a plan of one of the feed-wheels, hereinafter described. Fig. 5 is a sectional elevation showing another part of the feeding mechanism, which also serves for ejecting the cartridges. Fig. 6 is a plan of another feed-wheel hereinafter described. Fig. 7 is a sectional elevation showing the mechanism for rotating the said feed-wheels, and Fig. 8 is an edge view of a part of the said mechanism. Fig. 9 is a front end view of the breech-block or plunger detached. Fig. 10 is an elevation of the breech end of the barrel. Fig. 11 is a section on the line $x\,x$, Fig. 2. Fig. 12 is a front elevation, and Fig. 13 an edge view, of a lever for firing the gun by hand. Fig. 14 is a sectional elevation, drawn to an enlarged scale, showing part of a gun in which is inserted a cartridge made according to my invention. Fig. 15 is a sectional elevation of the said cartridge, drawn to an enlarged scale.

The remaining figures are hereinafter described.

A indicates a strong metal frame, which is provided with a lid or cover, A′, and which may be mounted on any suitable stand or carriage. The barrel B is fixed in the frame A, and does not participate in the recoil. At the rear of the barrel is the breech-block or plunger C, which slides longitudinally in suitable guides, as hereinafter described, and carries the firing-pin c and the cock or hammer c'. This plunger on its front upper side has a projection carrying a rod, C^2, passing through the guide a, and having at its front end a bridge-piece, d, to which are connected the spiral springs D. These springs tend always to draw or keep the plunger up to the barrel, but yield to the force of the explosion, so that the said breech-block or plunger is thereby forced backward, taking with it the empty cartridge-case far enough to allow the latter to be ejected from the gun, and to permit a fresh cartridge to be deposited by the feed mechanism in front of the breech-block or plunger. The spiral springs D are also connected with screw-threaded rods d', which pass through the frame A, and have on the outer side thereof nuts d^2, whereby the tension of the said springs can be regulated.

E is a continuous belt or chain into which the cartridges are inserted, so that they may be fed uninterruptedly from a box or magazine placed in any convenient position. I prefer to form this belt of a double web of any suitable fibrous material in which the cartridges are held transversely to the web and parallel to each other at equal distances apart.

To move the belt E uniformly and intermittently, and to bring the cartridges successively in front of the breech-block or plunger, I employ the following mechanism—that is to say, I arrange below the breech mech-